IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claim 1 in accordance with the following:

1. (currently amended) A method for computer-supported error analysis of at least one of sensors and actuators in a technical system, the error analysis being in a form of a ~~status-~~ finite state description that exhibits ~~statuses~~ states of technical system, the method using a computer, comprising:

    a) determining a ~~status~~ finite state description of the technical system for an error case of an error of at least one of a sensor and an actuator in the technical system;

    b) determining a first set of achievable ~~statuses~~ states for the technical system without errors using the finite state description;

    c) determining a second set of achievable ~~statuses~~ states for the technical system having an error, using the finite state description;

    d) forming a difference set from the first set and the second set; and

    e) determining result conditions from the difference set, the result conditions meeting prescribable conditions.

2. (previously presented) The method according to claim 1, wherein method steps a) through e) are implemented for all possible errors of sensors and/or actuators in the technical system.

3. (previously presented) The method according to claim 1, wherein failure probabilities are allocated to the sensors and/or actuators; and wherein the error analysis ensues taking the failure probabilities into consideration.

4. (previously presented) The method according to claim 1, wherein method steps b) and c) ensue according to a method of model checking.

5. (currently amended) The method according to claim 1, wherein a ~~status~~-finite state description of a process implemented by the technical system is included in the method.

6. (currently amended) The method according to claim 1, wherein the ~~status~~-finite state description of the process is realized by a finite automat.

7. (currently amended) The method according to claim 6, wherein the ~~status~~-finite state description is realized by a finite automat ~~in a form of~~ formed as a binary decision diagram.

8. (currently amended) A method for rapid prototyping of a technical system, the system having at least one of sensors and actuators in a technical system, the prototyping being in a form of a ~~status~~-finite state description that exhibits ~~statuses~~ states of the technical system, the method using a computer, comprising:

determining a ~~status~~-finite state description of the technical system for an error case of an error of at least one of a sensor and an actuator in the technical system, using the finite state description;

determining a first set of achievable ~~statuses~~ states for the technical system without errors using the finite state description;

determining a second set of achievable ~~statuses~~ states for the technical system having an error, using the finite state description;

forming a difference set from the first set and the second set; and

determining result conditions from the difference set, the result conditions effecting prototyping of the technical system.

9. (currently amended) The method error diagnosis of a technical system, the system having at least one of sensors and actuators in a technical system, the error diagnosis being in a form of a ~~status~~-finite state description that exhibits ~~statuses~~ states of the technical system, the method using a computer, comprising:

determining a ~~status~~-finite state description of the technical system for an error case of an error of at least one of a sensor and an actuator in the technical system, using the finite state description;

determining a first set of achievable statuses-states for the technical system without errors;

determining a second set of achievable statuses-states for the technical system having an error, using the finite state description;

forming a difference set from the first set and the second set; and

determining result conditions from the difference set, the result conditions effecting error diagnosis of the technical system.

10. (currently amended) A method for generating critical test cases for a commissioning and a system test of a technical system, the system having at least one of sensors and actuators in a technical system, the generating being in a form of a status-finite state description that exhibits statuses-states of the technical system, the method using a computer, comprising:

determining a status-finite state description of the technical system for an error case of an error of at least one of a sensor and an actuator in the technical system;

determining a first set of achievable statuses-states for the technical system without errors, using the finite state description;

determining a second set of achievable statuses-states for the technical system having an error, using the finite state description;

forming a difference set from the first set and the second set; and

determining result conditions from the difference set, the result conditions effecting the generation of critical test cases.

11. (currently amended) A method for preventive maintenance of a technical system, the system having at least one of sensors and actuators in a technical system, the method being in a form of a status-finite state description that exhibits statuses-states of the technical system, the method using a computer, comprising:

determining a status-finite state description of the technical system for an error case of an error of at least one of a sensor and an actuator in the technical system;

determining a first set of achievable statuses-states for the technical system without errors, using the finite state description;

determining a second set of achievable statuses-states for the technical system having an error, using the finite state description;

forming a difference set from the first set and the second set; and

determining result conditions from the difference set, the result conditions meeting effecting the preventive maintenance.